COMPUTER ART BY DICK SKOVER

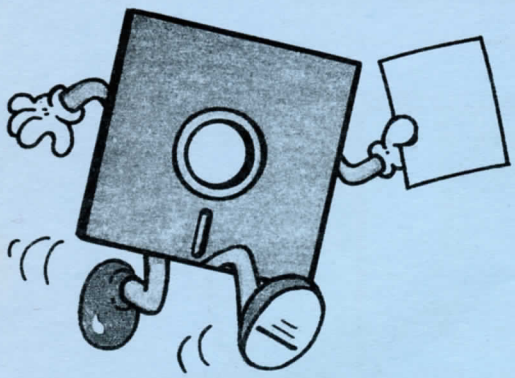
MILATARI NEWSLETTER

VOL 4 NBR 10 SEPTEMBER 1985

PRICE $1.50

SEPTEMBER EVENTS

Wed, Sept 18th 6:30 PM	--	Board of Directors Ground Round Rest. Hwy 100/Blue Mound
Sat, Sept 21st 2:00 PM / 5:00 PM	--	Milatari East Ambruster School 7000 Greenway St. Greenfield, WI.
2:00 PM		Preview of fall language classes. Beginning BASIC and 'C' Language.
3:00 PM		Technical forum
3:30 PM		520 ST Demo by Roy Duvall.
4:30 PM		Business Meeting



FROM THE DISK OF

Dave Frazer

This is the time of the year when we all seem say we are going to get back on track and get organized. Our plans for Milatari - the ideas your board has been throwing around since last spring are in this category. And a few of the ideas are beginning to grow and bear fruit.

MILATARI BBS

Our BBS is under construction and will be serving us on a full time basis shortly. Putting together a BBS is a large undertaking and sysop Rich Dankert is jumping through hoops to build a 1st class system. A detailed outline of the operation of our BBS will be printed in the next issue. The board will be 'password' access board. To get your own password, send the following information to Rich Dankert, W140 N5319 Lilly Road, Menomonee Falls WI 53051:

Name: _____
Address: _____
City, State: _____
Zip Code: _____
Home phone: _____
Password Desired<5 Chrs>_____
Milatari membership #_____

EDUCATION

This fall we have organizing two programming language classes. We will again offer our beginning BASIC program for new ATARI owners. Linda Scott will cover basic programming including using graphics, sound and joy/paddle ports. Mark Manyen will be teaching a class in 'C'. We are also looking for someone to teach forth and pascal. We have scheduled preview sessions for the BASIC and 'C' classes at this month's meeting. An outline of the lesson plans will be reviewed and class schedules will be determined. A fee of $10 will be charged for each class series.

MILATARI WEST

The board is in the planning stages for the Milatari West group this year. All current and past members will be receiving a questionnaire to help us in the direction of this group. Through this vehicle, we hope to expand our offerings to the Atari community. If you have an interest in this group, please take time to complete the questionnaire and return it.

ATR8000-CP/M SIG

The leadership of the ATR8000-CP/M SIG has been taken over by Joe Kasper. The SIG will meet on the second Tuesday of each month at Joe's home. His address is 12809 West Greenfield Avenue, New Berlin. Meetings begin at 8:00 PM. The group maintains a CP/M public domain library. Call Joe at 782-9041 for more details.

520ST SIG

The board is looking for someone to take the position of 520ST SIG co-ordinator. This group will support Milatari members owning and/or interested in Atari's new 520ST family of computers. Milatari will have a public domain disk library and publications for the 520ST family will be added to our publications library. I would like to meet with all 520ST owners at this month's meeting to set up a organizational meeting for this SIG.

SEPTEMBER BOARD MEETING

Due to a conflict in my schedule, the September meeting will be held on Wednesday, September 18th at the Ground Round. We begin at 6:30 PM - members are welcome to attend.

1030 RING DETECT

reprinted from:
Computer Squad News
March 1985

If you've ever thought about running a BBS on a 1030 modem, here is some information you may need to know. There are only 4 parts required to build a ring detector: 1) A phone wire to connect to your phone line. The plug-in type is best. 2) A joystick replacement cable. 3) A 125 volt AC relay. Radio Shack # 275-217b or equivalent. 4) A 22 MF or greater capacitor of at least 100 volts. 5) An optional plastic box. DO NOT USE METAL.

Connect the Green Phone Wire to pin 7 of the relay coil.

Connect the + (positive) end of the 20MF capacitor to pin 8 of the relay coil.

Connect the Red Phone Wire to the - (negative) end of the capacitor.

Connect the unit to the phone line and test to see that it responds. REMOVE IT FROM THE PHONE LINE!!

Connect the Orange Joystick Wire to the Common Relay Contact pin 4.

Connect the Black Joystick Wire to the N.O. Relay Contact pin &.

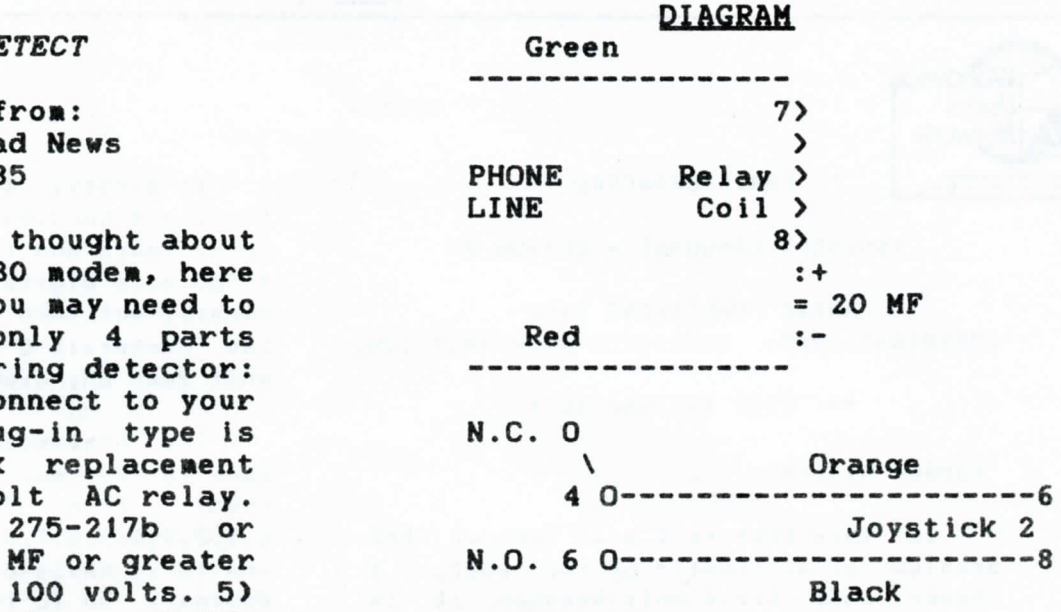
With a meter or circuit tester, check that no connection between the phone wires and the joystick wires occurs. Cross check all four wires.

Package up, to protect the unit and install in Joystick port 2.

Plug the unit into the phone jack. You may need a Y telephone adaptor jack.

You are now ready to run your software.

DIAGRAM



** CHRIS CRAWFORD **

ASSEMBLY LANGUAGE - LESSON 2

** 6502 ARITHMETIC **

NUMBER SYSTEMS

In this lecture I will take up the problem of arithmetic on the 6502. I choose this topic only because it is fairly simple to do on the 6502. There are a couple of nerve-jangling problems associated with 6502 arithmetic, but I will breeze over those in a very cavalier fashion.

Before we can do arithmetic, though, you must know a little bit about number systems. There are three that you must know: decimal, binary, and hexadecimal.

Decimal is the standard numbeat you have used since grade school. You count 0, 1, 2, 3, 4, 5, 6, 7, 8, 9, and then you reach 0 again, so you put down a 1 in the tens place and resume counting from 0.

Binary works the same way, except that there are only two digits, not ten. The two digits are 0 and 1. You count 0, then 1, then you reach 0 again, so you put down a 1 in the twos place and resume counting from 0. Thus, counting from 0 to ten in binary like this:

Decimal	Binary
0	0
1	1
2	10
3	11
4	100
5	101
6	110
7	111
8	1000
9	1001
10	1010

In binary, instead of having ones, tens, and hundreds places, we have ones, twos, fours and eights places. It takes a lot more digits to express a number in binary, but then again, we have only the two numberals 0 and 1 to work with, so what does one expect?

The hexadecimal number system is a base-16 system. In this system, you count from 0 to 16 like so 0,1,2,3,4,5,6,7,8,9,A,B,C,D,E ,F,10. The 10 in hexadecimal really means 16 in decimal. So 10 is 16, right? Black is white, truth is likes....stay with assembly language long enough and you'll believe anything.

Actually, it's easy to avoid confusion. We use little prefixes to tell you and the computer whether a number is expressed in decimal, binary, or hexadecimal. No prefix means decimal. A $ prefix means hexadecimal; a % means binary. Thus %10 means 2 while $10 means 16, but 10 means just plain old 10. Hexadecimal is not hard to learn at all; if you go into any store you will see that they use hexadecimal on all their signs.

ADDITION AND SUBTRACTION

Addition with the 6502 is very simple; it uses the ADC instruction. This instruction means "Add with Carry"; I'll get to the Carry part in just a moment. For now, let me explain the instruction. The ADC instruction has an operand, normally a location in memory. When the instruction is executed, it takes the contents of that memory location and adds that value to the value in the accumulator.

It leaves the sum of the two numbers in the accumulator. This of course destorys the old value in the acucmulator. You can use the immediate mode of addressing with the ADC instruction, in which case it adds the value itself. Thus, "ADC # 9" will add

while "ADC FISH" will add the contents of address FISH to the accumulator.

Subtraction is just like addition. The instruction to use is SBC, which means "Subtract Borrowing Carry". Again, I'll tell you about the Carry part in a moment. This instruction subtracts the operand from the contents of the accumulator, leaving the reslt in the accumulator, It also can be done in either immediate mode (e.g. SBC#5) or absolute mode (e.g., SBC GOAT).

WORD LENGTH PROBLEMS

If that were all there were to arithmetic with the 6502, programmers would be paid a lot less. The first killer problem is that the 6502 uses 8-bit words; that is, the numbers that the 6502 stores and works with are only 8 bits wide. This means that the biggest number the 6502 can comprehend is 255. Uh-oh! What happens if you want to have a checkbook balancing program and you have more than $255? What happens if you get more than 255 points in your "Decapitate the Orphans" game? In fact, what happens if you just ignore the limit and add, say, 10 to 250?

Well, believe it or not, the 6502 will give you an answer of 4. Why? The number system that the 6502 uses is like a wheel, with 0 at the top, counting clockwise 1,2,3,...all the way up to 255, which lies right next to the 0. If you go up from 255 you just wrap around past the 0 and start all over. Similarly, if you subtract 2 from 0, you'll get 254.

The solution to all this is provided by the Carry bit, discussion of which I've been putting off unitl now. The Carry bit is a flag that the 6502 uses to remember when it has done arithmetic that carried it over the boundary between 0 and 255. By using it properly, you can solve your arithmetic problems.

The first trick to using the Carry bit is to use multi-byte words. This means that, instead of using a single byte to store a number, you use several. For example, if you use two bytes to remember a number, you can store a number as large as 65,535. three bytes lets you to to 16,777,215. Four bytes lets you go to 4,294,967,295. big enough for you?

To use multi-byte arithmetic, you set up a series of additions of subtractions. Suppose, for example, that you want to add two two-byte words. The program fragment to do this would look like this:

```
LDA     LOFISH
CLC
ADC     LOGOAT
STA     LOANSR
LDA     HIFISH
ADC     HIGOAT
STA     HIANSR
```

This little fragment of code assumes that the first two-byte value is called (LOGOAT, HIGOAT), and that the , HIANSR). The new instruction, CLC, stands for "Clear Carry" and it means that the Carry bit should be set to 0. It should always be used with all additions except chained additions like this one.

The code does the following: first it adds the two low values. If the addition resulted in a wraparound (result greater than 255), then the Carry bit was set; otherwise, it was cleared. Then it performed the second addition, adding in the value of the Carry bit (That's why we call it "Add with Carry"). Thus, if a wraparound occurred, an additional one was added into the high sum. This system insures that multi-byte addition works properly.

For subtraction, you use the SEC instruction ("Set Carry"). Otherwise, you handle subtraction the same way that you handle addition. In both additions

and subraction, though, the low bytes must be handled first, then the higher bytes in the proper order (lower to higher).

DECIMAL & SIGNED ARITHMETIC

There are two variations on standard 6502 arithmetic. Both are so rarely used that I will not treat them here. The first is decimal arithmetic using the Decimal flag. This allows you to set up an automatic decimal adjust mode. This is useful in certain types of arithmetic, decimal adjust mode. This is useful in certain types of arithmetic, primarily BCD arithmetic.

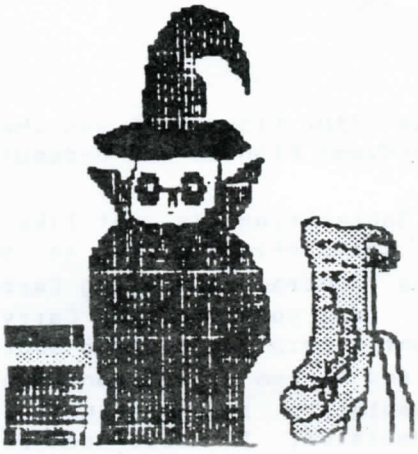
If you don't know what this is, don't bother with the Decimal flag. Your program should always begin with the instruction CLD, which means "Clear Decimal Flag". I will tell you this just once: failure to clear the decimal flag is the source of the most frustrating and impossible-to-trace bug in the 6502. Every single program should start with the instruction CLD.

The second arcane bit of 6502 arithmetic is signed arithemetic. It uses the V flag ("oVerflow"). Signed arithmetic is always confusing and seldom useful. In 7 years of working with the 6502,I have never had need of it. Don't bother.

LIMITATIONS ON 6502 ARITHEMETIC

There are quite a few limitations on 6502 arithmetic. There is no facility for multiplication and division; you have to wirte subroutines to do that. You must design your programs to make do with 8-bit words; failing in that, you must use multi-byte arithemetic, with its consequent price in speed and TAM. All in all, arithmetic is a real pain on the 6502. This is the major reason why most 6502 programs do so little arithmetic.

****



From: Atari Computer Club of Toledo
The Man from A.S.C.I.I.
Reports: #685 & 785
E.Z. Hintz reporting...

Send all questions to:
Man from A.S.C.I.I.
c/o Robert P. Wrobel
606 Carlton
Toledo, Ohio 43609

ADVENTURE: HITCHHIKERS
QUESTION: After pushing the button on the hitchhikers thumb, I end up in the dark. What do I do?
HINT: Five senses

ADVENTURE: SERPENT'S STAR
QUESTION: What is the answer to the first riddle asked by the old man?
HINT: St. George & the dragon.

ADVENTURE: SANDS OF EGYPT
QUESTION: How do I open the drain in the pool?
HINT: Hook or by Crook.

ADVENTURE: EMPIRE OF THE OVERMIND
QUESTION: In the root cellar, what next?
HINT: He who lookth, findth.

ADVENTURE: MISSION: ASTEROID
QUESTION: What is the flight pattern to the asteroid?
HINT: GE,GE,TE,UE,TE,TE,TE,GE,CK,CK.

E.Z. HUNTZ singing off .....

An interview with Erik Gunderson

of City Software Development.

Milatari: Tell us a little about City Software.

E.G.: City Software is a software house that does internal software development and also writes software for other companies on a project basis. One of our big clients in the past has been Okidata Corporation. We did the value added software for the Okimate 10 printer, for the Atari 800 and 400 computers, as well as, the Commodore 64 and other computers.

Milatari: What is your involvement with the 520ST ?

E.G.: We purchased a development system and we're learning to use it for our own development. We also have a contract with Okidata Corparation which we are currently working on.

Milatari: How does Atari rate compared to other manufacturers?

E That's hard to say for a couple of reasons: first, with the change of ownership last fall, the personnel and persona of both Atari and Commodore have changed. Secondly, the ST project is moving so fast at Atari, problems arise due to the speed. When I met the people at Atari and spoke with them in person, I found that they are all extremely friendly and eager to be helpful. Our experience with the Atari ST development system in getting updates and such from them over the past few months has been problematic simply because we don't get things in a timely manner. I guess that it's due to the speed with which things are changing and Atari's deadlines. We were one of the first fifty people to get the development system, back in March. Today there are over 500 Atari ST developers, so they have had an exponential increase. But Atari still has the same two or three people handling all the developers. That's where our group encounters problems.

Milatari: Has Atari been making efforts to satisfy your needs as a developer?

E.G.: Yes, They are very encouraging. They want people to support the machine. Sometimes it takes a while to get their help, but they seem to want to give us whatever help we need.

M tari: Do they seem to be agressively addressing t.. problems you have discovered?

E.G.: With the development system or with getting things done?

Milatari: Getting things done.

E.G.: We find that we just have to call them up and remind them and we'll get the things that we need. It's not a major concern.

Milatari: How do you rate the ST against its competition?

E.G.: For the price, the Atari ST is the best piece of hardware available. I saw the Commodore Amiga in San Francisco 2 weeks ago. It is an extremely impressive machine but it costs much more than the ST. ... For the price performance ratio, the ST is a good buy. I think its major problem right now is that it's a new system and they are still working the kinks out of it. And it's not compatible with anything else, so it's almost impossible to get software for it.

Milatari: Do you see the ST as a home machine and/or a business machine?

E.G.: What do people do with a home computer these days? You can play some great games on the ST. You could use the ST as either. It's powerful enough that with some good productivity software, a spreadsheet and a database, you could use it for a small business. It's also cheap enough that you can buy it for personal computing purposes.

Milatari: What do you think is the best machine on the market in any price range?

E.G.: In the under $500 range the Commodore 64. $500 - $1000 range the Atari ST. The over $1000 the Macintosh and maybe the Commodore Amiga when it's available.

Milatari: What plans do you have for ST developments?

E.G.: We'd like to port over some of our spectrometer simulators. Other ideas we have invovle other educational software in chemistry, physics and such. Another area I'm really excited about is the optical disk capabilities that are available for the ST. It opens a whole new realm of possiblities. There are lots of applications needed, not just the encyclopedia but possibly the reader's guide to periodicals or bound periodicals. The technology available this fall for optical disk is mainly the read only capability. They will stamp out databases like records. But that's just a beginning. Within a year or so they are planning an optical disk drive that you can write on, a write once drive and then a write/read/erase optical disk drive that you can use just like a floppy but with a huge storage capacity. It's going to be a very exciting time.

MORE ON PAGE 9

The following is reprinted with permission from the June 85 edition of "CompUtah" the newsletter of A.C.E. of Salt Lake.

Where the ACTION! is

This month I want to review ACTION! data formats. In BASIC most variables are implicitly defined. The first time you use a variable it is placed in the variable name table and BASIC will assume all the characteristics of that variable. The exception to this rule is arrays which must be explicitly defined in a DIM statement. In ACTION! all variables must be explicitly defined.

In BASIC all variables are valid throughout the whole program while in ACTION! variables have a scope. The scope of a variable depends on where it is defined. If a variable is defined at the top of a program before any Procedures have been defined then it will be valid for use anywhere in the program. These variables are called "global" variables. If a variable is defined after a PROCedure statement then it is valid only within that Procedure. These variables are called "local" variables. If more global variables are desired there is a MODULE statement which simply says to the compiler that you want to declare more global variables and that their definitions will immediatly follow. The disadvantage to the MODULE statements is that it is very convenient to place all global variables at the front of a program so that a variable's definition can be easily found.

In BASIC there are only two kinds of variables - numeric variables and string variables. Numeric variables are all floating point variables which is one of the reasons BASIC is so slow - the system supplies several routines to manipulate floating point variables but this code is lengthy and does not readily take advantage of the instruction set of the ATARI hardware. ACTION! does not include any native floating point variables. Instead it's variable types are designed around the ATARI processor's capabilities which greatly speeds up numeric calculations. (If floating point variables are needed then the ACTION! Toolkit has routines for using floating point variables).

ACTION! has three kinds of fundamental variables - BYTE (or CHAR), CARDinal, and INTeger. BYTE variables are just that - one byte long. This means that the value of the varible can range between 0 and 255. CARDinal varibles are stored in two bytes (least significant byte, most significant byte) and are unsigned, meaning that they can vave a value between 0 and 65535. INTeger varibles are the same as CARDinal varibles except that they have a sign. Thus INTeger variables can have a value between -32768 and +32767.

ACTION! varibles are defined by first giving the type and then a list of variables to be defined:

```
BYTE var1, var2, var3
CARD var4, var5, var6
INT  var7, var8, var9
```

Notice that lower case letters are valid in varible names. If a variable needs to reside at a specific location in memory then it is defined at that location by following the variable by an equal sign and the location of that variable:

```
BYTE CH=764, CRSINH=$2F0
CARD MEMTOP=$2E5
```

This capability is very handy for manipulating operating system locations - instead of having to do POKE's (There is a POKE subroutine) you can define a variable anywhere in memory and manipulate it directly:

```
CRSINH=1; Turn off the cursor
```

If you want to assign an initial value to a variable you follow the variable by an equal sign and the value in brackets:

```
BYTE var1=[0],var2=[1]
```

Each of these variable types can be an array:

```
BYTE ARRAY Page6(256)=$600,
       Numbers=[1 2 3 4]
CARD ARRAY Cards
```

Notice that the arrays do not have to have a size given. If you know the size it is always better to give it so that ACTION! knows how much room to reserve for the array. The arrays elements always begin with 0 so if you declare an array to have 10 elements they are numbered 0 - 9. The array most commonly used is the BYTE array. This is how strings are stored:

MORE

```
BYTE ARRAY String=["String"]
```

The array name, in this case "String", is actually a CARDinal variable pointing to the memory location where the string is stored. Any CARDinal variable can point to a string:

```
CARD StrPtr
StrPtr="String"
```

A string in ACTION! is the more traditional string – the first byte is the length and the rest of the array is the string. The one byte length field limits the string to being only 255 characters long. However BYTE arrays can be much longer and it doesn't take too much programming to build string arrays (I will cover how to do this in a future column).

There are also two other variable definitions. POINTERs point to a variable of the type in the definition:

```
BYTE POINTER Ptr
```

Ptr is actually a CARDinal number that points to a BYTE location. The other type of variable definition is the RECORD which can group several data types into a single entity which then becomes a new data type. If this sounds complicated it is! I will also discuss this in more detail in a future column.

Bill Francis

From Page 7

Milatari: To wrap it up what is the best and worst you can say about the Atari ST?

E.G.: The Gem operating system is very nice but I prefer the pull down menus like the Macintosh uses. It's too easy to accidentally touch the drop down area. Also, I don't like the fact that the clock calendar gets reset every time you change screen resolutions. Another thing that is irritating is that if you install another disk drive and save the desktop, you have to reboot the system to activate it.

Milatari: That's not the way I understand it should work.

E.G.: Well, that is the way it does work! If you boot with one disk, Gem gives both drive icons A and B to the first drive. If you install another drive, it will not reallocate them. It only checks for devices at boot time. I talked to a programmer at Atari and he said that this situation was due to the design of Gem and not Atari's implementation. Those are the things I don't like about it. The things I like about the ST are: The control panel feature is very useful. You can change the colors and the keyboard response attributes easily. The one megabyte drive is nice but I really want to get a hard disk drive.

Milatari: When will they be available?

E.G.: According to Atari, they should be available for developers this month (Aug). It will make it a lot easier to do development work. It is a lot faster. Compiles that take 15 minutes on floppies take less than 1 minute with the hard disk. The hard disk is going to be the best salesman for the system. In general I just like what the ST does. It has a lot of potential and it is a good buy for the money. It would be a better buy if there was more software available, still it is a good tool.

Milatari: Thank you.

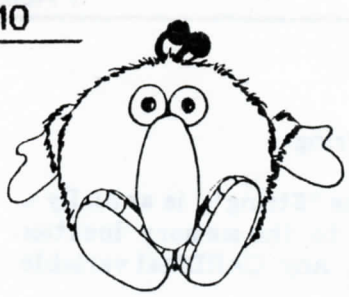
ATTENTION ALL MODEMS

There is a new BBS in town run by Peter Chrostowski. It's name is 'The Temple at Delphi BBS' (414) 481-6486. It's open 24hrs a day. Peter requires that you register before full priviledges are granted. 300 Baud only at this time. About 160 downloads are available and 3 message bases. A one time $5.00 fee is requested.

Another local board Atari Magic - the longest continously running Milwaukee Atari Board is available to for your perusal. This board is run by Bob Devillers it offers music, utilities, movies, pictures and the choicest of games. Four message bases and electronic mail are also available at 300 or 1200 baud. Bob requests a $10 initiation fee and $5 yearly renewal. The board offers quailty telecommunications for the adult Atari community. Give them a ring at (414) 353-1185

THE FUZZY NOLAN REVIEW

BY GARY NOLAN



DECISIONS--DECISIONS--DECISIONS!!!

How can you knock something that should have been yours? How can you say something is inadequate when it's not? I don't know either, so lets move on to something else. The ST's have started to arrive at the stores in small numbers, but at least they're here. Someone at Atari states that they will have 30,000 on the shelves by the end of August, and 300,000 out by the end of the year. He also claims that by the end of '85 they will be producing some 200,000 units a month. Sounds good, but in the same issue I read where it's estimated that Atari sold only 500,000, 800's. Think about it! It's called marketing strategy, planning ahead and sometimes optimistic projections. Two people from two software houses talking to the same reporter about the next BIG computer system. Person "A" says that Atari's new ST series is going to be the hottest thing going and that they are behind it all the way. Person "B" says that the Amiga is so great and wonderful and vastly superior that Apple should trash the MAC and license the advanced Amiga technology from Commodore. He also claims that the Atari ST's have a snowballs chance in XXXX, well suffice to say he's not high on the ST's future. I also read where one software developer was complaining that his brand spankin' new Amiga crashes about every fifteen minutes or so. Reports are that there are BIG problems with this OS. And lest that smirk spreads to a wide grin be advised that Atari is not having all that easy a time stuffing well over 200K of TOS/GEM operating system into the 192K of space allocated to it! But they're getting closer every day, why just the other day they got it down to 210K. They will have to hurry though, if they're to have the 260STD on the shelves of your local K-Mart, Target, Toys-R-Us and assorted mass merchants in time for the big Christmas selling season. If you're not all that familiar with the 520ST or the 260STD here's why getting the OS size down is so important. The 520 has 512K of RAM and the 260 has 256K, now if you load an operating system that's over 200K it doesn't leave you very much room for your programs to load, especially on the 260. The trouble with trying to cut it down to size is that you end up leaving holes in the OS. Those holes have to be patched and most times when you do that you end up with bugs. No matter how much memory you start with, the programmers who write the OS code always make it too big. Which is why most computer OS's have bugs the first time out. Speaking of OS's and the two newest computers on the block. What about upgrades for these systems? Commodore has hinted that the first Amiga buyers just might be out of luck as far as updates are concerned, and Atari is going to charge about $25. Lets hope they get a working version in ROM. After being sold computers with an advertised "64K of RAM" that turns out to be only 30K or so of real RAM, selling a 512K computer that has 256K or less working space is not really an improvement. Not when the software has grown at the same rate as the OS's have. Should I buy or should I wait? As I said at the top DECISIONS, DECISIONS, DECISIONS! Oh well, for now I'M having fun with my Daytona, but come the winter with snow blocked roads, I'll have to have someway to spend the long cold nights. Maybe an Amiga? After all it is (or should have been) the ultimate Atari, isn't (wasn't) it? The same person who designed the old 800 did the Amiga using the same ideas and techniques with faster chips, more memory and a few new tricks.

IS HE DOWN AND OUT?
(OR JUST TAKING A STANDING EIGHT COUNT)

Some of the know-it-all Wall St. pundits and more than a few journalists are humming the funeral durge for the "personal", re-read that to mean the "home" computer. They knew it was a fad all along, you know like the Hula Hoop and the Pet Rock. Ya know something, they're right, it is a fad. Just like talking movies, horseless carriages, them infernal flying machines, television, rock 'n roll, VCR's, combination cassette deck/AM-FM portable stereos, ect, ect, ect. The list of "useless" fad items could go on and on. In reality the computer IS a fad item. But like many other things it is an item that can be many things to many people. It can teach, it can be a very productive tool (yea even in the home), it can inform, it can help people communicate with each other and yes it can entertain us. But it can only do these things if we want it to, and if we use it properly and responsibly. For it can do as much harm as good. I think that all that's needed to re-kindle the average persons interest in owning a "home/personal" computer is for the industry to start acting responsibly. Hardware manufacturers have to build reliable systems at reasonable prices, without all the outrageous claims of how it'll make your children an "A" students with promises of success in life. This seems to be happening now on the first two counts, but we'll have to wait for the next round of ads from the big "C" to see about the latter. Software houses will have to offer reasonably priced packages and offer some type of guarantee as to the fitness and performance of the product. Not that (in some cases) insulting disclaimer of responsibility that they try to hide behind. They too have to look at their ad policy. Unfortunately until the software industry cleans up its act computer sales will suffer. The hardware and software companies will come around and straighten up because if they don't, they'll go out business. To bad we can't get some of the analysts and reporters to clean up their acts. They've done their share of harm to the industry and to companies that for some reason they have decided to give the evil eye to. Atari seems to be coming under their gaze and could suffer because of it. Right now the press seems to be enamored with the Amiga and mentions the ST very little or only in passing. Both are good machines and have a legitimate place in the market. But the fact remains that by jumping on a bandwagon of one system and ignoring or building unfair comparisons to others the press can do untold harm. Right now among most of the press both Atari and Commodore have "game company" images. And unless the press judges these systems on their own merits and without preconceived notions of what they are, both systems (and companies) could be short lived. It's well known that both Commodore and Atari are betting their future on these systems. The Amiga looks like a good computer (after all its heritage is good) and if it would've had the Atari name on it we'd all be raving about it. And if Fast Jack was still at Commodore and brought out the ST, we'd be laughing at "another clone machine". Only time will tell if one of these systems is THAT much better than the other. But the uses are too many and too real for the computer to just fade away to "fad heaven" along with the Hula Hoop. This is but a lull in the revolution. (Talk about getting carried away)

THE REPORTS OF THE DEATH HAVE BEEN GREATLY EXAGGERATED
(OR MISUNDERSTOOD, OR SOMETHING)

MPP is dead, kinda. The company known as MPP has been dissolved and a new company called Supra was formed with the leftovers. Supra will be run by the same people who ran MPP and will still sell MPP products and honor the warranties of those same products. They are offering some of MPP's

products directly to Atari user groups at reduced prices. MicroNet is a device that allows up to eight Atari computers to share the same disk drive or drives, printers or other peripherals. This is NOT a networking device that allows several computers to communicate directly. It is intended mainly for schools and others who have many computers but fewer extra devices. MicroPort is intended for you experimenters and will allow you to access the parallel bus on the 600/800XL and the 130XE. It has 6520 PIA chip, ten square inches of prototyping area, power supply and regulator circuitry and selector switches to allow you to set the address at which MicroPort will reside. You will have to be able to program in machine code or Action in order to use it. And if none of this made any sense, MicroPort is not for you. But one of the Hard Disk packages just might be. Package "A" comes with a hard disk adaptor, hard disk controller, 10 Meg hard disk, power supply, case, cable and special hard disk DOS.Package "B" is for the do-it-yourself person, and consists of the hard disk adaptor and the hard disk DOS. Prices on the above items are as follows;

MicroNet $159.96
MicroPort $39.96
Pkg. "A" $719.00
Pkg. "B" $200.00

They are also offering other items such as print buffers, printer interfaces, modems and some communications software at reduced prices. See Dave at the meeting to order or to get other prices.

MY, MY, HOW THAT CHILD HAS GROWN

We all know that the 130XE is an 800XL with added memory. Some of you 800XL owners might be thinking of moving up to the new computer for that extra RAM. Well you might want to take a look at the September issue of BYTE magazine, page 247. In that article the author tells you how to boost the memory of an XL to 256K. Twice that of the 130. You'll have to be prepared to unsolder the memory chips and to build some added circuitry. You can use the extra memory as a RAM-disk with software that you'll have to download from the BYTEnet BBS. If you're so inclined, pick up the latest BYTE and read the article. If you do try it and it works let us know. Maybe we could do a workshop on the upgrade.

IT'S BACK, IT'S UP, IT'S HERE

The MilAtari BBS is finally back in operation. It took a while but it's really on-line. Sys-op Richard Dankert has the board up and running at 781-5710. There are going to be some bugs to work out so if you call and can't get through or have some trouble while on the board, have faith and patience and it'll all be worked out in short order. This is a password system and you will have to apply for a password to be able to access most of the boards features. Give it a call and sign up today.

Well, FUZZY wants to go for a ride with his nose hanging out the sunroof. Both he and Mielcarek get a kick out of doing that.See you on the 21st, BYE.....

Reprinted from "CompUtah" the newsletter of A.C.E. of Salt Lake.

A Question of DOS

Over the many years, and through the many incarnations that the ATARI computer has been on the market, there have been a number of DOS' available for our favorite machine.

Starting with Atari 2.0S DOS, "the workhorse" according to some, to SpartaDOS, the newest and "most versatile" DOS, according to others, we have been faced with a myriad of different disk operating systems, each offering its own peculiar advantages and disadvantages. Now, this article is not meant to be an in-depth view of all of the available DOS', but instead, a quick once-over of some of the most popular systems. DOS' covered here include; ATARI DOS 2.0S, 2.5, 3.0; Mach DOS 2.1; Smart DOS; Top DOS; DOS XL 2.20; SpartaDOS; and MYDOS 3.1.

In our little 48K world (face it, when using BASIC, and unless you happen to be the lucky owner of an UPGRADE memory upgrade, you're stuck with 48K of RAM before DOS), you are trying to conserve every possible byte of memory for that awesome program you're writing, and as such, a DOS that takes up little room in that precious RAM space is important. Of all the DOS' mentioned above, MYDOS leaves you the most room; 31.8K (32574 bytes). On the other hand, DOS XL was the most overweight of the bunch, leaving 29.4K (30138 bytes), but as we will see, each has it's advantages. The rest of the DOS' rank as in the chart below.

Double Density?

Another major feature that many of us have become concerned with since the advent of Rana, Trak, and Indus, is double density capabilities. For those of you who are not familiar with it, double density allows twice as much information to be written to a sector as compared to single density (256 bytes per sector as opposed to 128 bytes). The only DOS' that did not support double density are those from ATARI.

Although ATARI did release a double density disk drive and DOS (DOS 2.0D), it wasn't very popular, due to the cost of the drive, and since then, ATARI has rather ignored the double density market, choosing instead to introduce their own version of increased storage.

Dual Density

ATARI's answer was dual density, which flowed forth from mother in two versions; the disastrous DOS 3.0, and the well-received DOS 2.5.

The problem with DOS 3.0 was that it used a totally incompatable format as compared to DOS 2.0S. Data was written on the disk in blocks not sectors (a block is a group of 8 DOS 3.0 sectors), and while there was a utility for converting DOS 2.0S files to DOS 3.0 included on the master diskette, there was no utility to convert them back. Another major problem with the DOS was an unfamiliar menu. The result was widespread discontent, and a (practially) useless DOS.

DOS 2.5, on the other hand, used the old familiar menu and sector system found in DOS 2.0S, but increased the sector count from 720 to 1010. ATARI accomplished this by increasing the sector count from 18 per track to 26 per track. The track count remained the same at 40.

"Would you like to see a menu?

Most of the DOS' written for the ATARI computer are menu operated, that is the functions are accessed through a DOS Menu. Any of you familiar with DOS 2.0S will know immediately what a menu is. For those unfamiliar with a "menu", it is a list of DOS functions accessed by selecting the number or letter which corresponds to the desired function. Of all of the DOS' listed above, there is only one DOS, SpartaDOS, which is not menu driven, but command driven. There are two others, DOS XL and TOP-DOS, that can be either menu or command driven.

A command driven DOS, requires the user to type in whole commands such as DIR for directory, or INIT to format a disk, and write the DOS in some cases, to operate. Most of these systems contain "command files" to accomplish tasks like copying files, or initializing the disk, while simple functions such as getting a directory, locking and unlocking files, or erasing files, are built-in commands. The main advantage to these DOS' is the immediate access to the DOS, whereas menu driven systems have to load in a DUP.SYS file to access the DOS functions.

The major disadvantage to these sytems is that to use the DOS functions that exist in command files, one must either have the master disk handy, or copy those files over to the working disk, which takes up valuable disk space.

"What's 'RESIDUP'?"

To make up for DOS access speed, three of the listed DOS', Mach DOS, Smart DOS, and TOP-DOS, will allow the user to make the DUP.SYS package resident

The amount of memory they consume ranges from 1415 bytes (TOP-DOS) to 9092 bytes (Smart DOS). Mach DOS consumes 7135 bytes, and when operating on an XL or XE, Mach DOS will automatically place DUP.SYS in a 4K bank of memory not accessed under normal conditions by BASIC.

"But will it work with what I've got?"

If you're like most of us, you are using ATARI DOS 2.0S. If you go looking to transfer files from DOS 2.0S to a new DOS, you'll need to know if it is "DOS 2.0S compatible", that is, if it used the same file structure, or if a disk formatted by DOS 2.0S can be read by other DOS' and vice-versa. Of all of the listed DOS', only two, ATARI DOS 3.0 and SpartaDOS, will not transfer files without additional help.

As mentioned previously, DOS 3.0 comes with a program to transfer files from a DOS 2.0S (or compatible) format to DOS 3.0. SpartaDOS comes with SPCOPY, a utility which the maker claims will copy from any format to any format. To date, I have found it lives up to its claims.

Learn a Second Language

All of the DOS' speak "sectoreese" except for SpartaDOS. SpartaDOS is a unique DOS as far as what's been avaialble for the ATARI. It is a command driven DOS that is quite similar to DOS' written for the IBM PC, in the respect that it time/date stamps files, and records file sizes in byte lengths, instead of sector lengths.

Also, the directory of the files is a file itself, and as such can contain sub-directories, which makes it very useful for specific purposes. But to give SpartaDOS its due, would require an article of its own.

Finding the Perfect DOS

The trick to all of this is finding the perfect or ideal DOS. What might be the right DOS for you may not work for the next guy or gal, and what might be perfect for one application may not beright for any other. The best thing to do is to look for a DOS that offers most features you are looking for, with the least amount of "extraneous matter". Strike a balance that you are comfortable with, and then buy the DOS. The only way to make sure that you are getting an unmodified copy is to buy it. It also helps to have the instructions to boot!

From an altruistic point of view, the "perfect" DOS would support all three disk formats, leave the user the maximum amount of free memory, say 40K or so, and take up little space on the disk. Now while none of the DOS' out there will support all three densities, and all of them take up too much room in memory and on the disk, we're a long way from the "perfect DOS". But we can always hope, can't we?

Peter Avlon

Comparison Chart

	DRIVE BY		DENSITIES SUPPTD				ATARI 2.0S	LENGTH IN SECTORS		
DOS NAME	MENU	CMD	SING	DUAL	DOUBLE	RESIDUP	COMPATIBLE	DOS.SYS	DUP.SYS	FREE MEM IN BYTES
ATARI 2.0S	Y	N	Y	N	N	N	Y	39	42	32274
ATARI 2.5	Y	N	Y	Y	N	N	Y	37	42	31762
ATARI 3.0	Y	N	Y	Y	N	N	N	4 BLOCKS	6 BLOCKS	32274
Mach DOS	Y	N	Y	N	Y	Y	Y	39	50	30478
Smart DOS	Y	N	Y	N	Y	Y	Y	34	70	31734
DOS XL 2.2	Y	Y	Y	N	Y		Y	46		30138
MYDOS 3.1	Y	N	Y	N	Y	N	Y	27	39	32574
TOP-DOS	Y	Y	Y	N	Y	Y	Y/N	38	75	31886
SpartaDOS	N	Y	Y	READ	Y		Y/N	6158 BYTES		30990

MILWAUKEE AREA ATARI USER'S GROUP AND NEWSLETTER INFORMATION

MILATARI OFFICERS

President	David Frazer	542-7242
Vice President	Carl Mielcarek	355-3539
Secretary	Jim Mangione	764-6855
Treasurer	Steve Tupper	462-8178

MILATARI VOLUNTEERS

MILATARI West	Dennis Bogie	968-2361
Education SIG	Joe Sanders	447-1660
ATR8000 & CP/M	Joe Kasper	782-9041
Adv. Lang. SIG	Erik Hanson	252-3146
Database	Ron Friedel	354-1717
BBS Sysop	Richard Dankert	781-2338
Membership	Dave Bogie	968-2361
Newsletter	Roy Duvall	363-8231
Public Domain Libraries		
Cassette	Dennis Wilson	476-7767
Disk	Bob Bobinger	466-9341
	Bill Lawrence	968-3082
Copyright Library		
Cassette/Disk	Gary Haberman	228-8845
Publications	Bill Feest	321-4314

NEWSLETTER INFORMATION

This newsletter is written and printed by members of the Milwaukee Area ATARI User's Group (MILATARI). Opinions expressed in this publication are those of the individual authors and do not necessarily represent or reflect the opinions of the Milwaukee Area Atari User's Group, its officers, its members or its advertisers except where noted. Articles reprinted from bulletin boards and other newsletters are presented as an information exchange, no warranty is made to their accuracy or factuality.

Your contributions of articles are always welcome. You may submit your article on ATARI compatible cassette or diskette, on typewritten form or you can arrange with the editor to upload your file via modem. You can send Graphics eight or seven plus screens stored on disk in Micropainter or Micro Illustrator formats.

Other computer user groups may obtain copies of this newsletter on an exchange basis.

Milwaukee Area Atari User's Group

MILATARI is an independent, user education group which is not affiliated with ATARI INC. The newsletter is the official publication of MILATARI and is intended for the education of its members as well as for the dissemination of information concerning ATARI computer products.

MILATARI membership is open to individuals and families who are interested in using and programming ATARI computers. The membership includes a subscription to this newsletter and access to the club libraries. The annual membership fee is $15 for individuals or $20 for a family.

Vendors wishing to display and/or sell items at MILATARI meetings must make prior arrangements with the club vice president. Rates are $10 per meeting or $90 per year payable in advance.

MILATARI ADVERTISING RATES

This newsletter will accept camera ready advertising copy from anyone supplying goods and services of interest to our membership.

Current paid members of MILATARI may place classified ads in the newsletter at no charge.

Advertising Rates

Full page	$37.50
Half page	$20.00
Quarter page	$12.50
Business card	$2.00

MILWAUKEE AREA ATARI USERS CLUB

U.S. POSTAGE PAID
BULK RATE
PERMIT NO. 201
WAUKESHA, WI 53187

MILWAUKEE AREA ATARI USERS CLUB
P.O. BOX 1191
WAUKESHA, WI 53197-1191

==========

Address Correction Requested
Forwarding Postage Guaranteed

==========